Amendments to the Claims

The following listing of claims is intended to replace all prior versions of claims in the application and includes all claims now active in the application, along with the status of each. In this listing, insertions are underlined, as follows: inserted text. Deletions are struck through in bold type, as follows: ~~deleted text~~.

1. (Currently amended) A method of correcting scatter comprising:

obtaining a voxellized representation of a 3D image of an object from a plurality of projection data, wherein the projection data comprises raw CT image data;

calculating a single scatter profile for the object using the voxellized representation of the 3D image of the object;

determining the total scatter profile for the object using the single scatter profile and an adjustment factor by multiplying the single scatter profile by the adjustment factor; and

correcting the projection data using the total scatter profile to obtain a scatter corrected projection data.

2. (Original) The method of claim 1, further comprising reconstructing the scatter corrected projection data to obtain a scatter corrected 3D image.

3. (Canceled)

4. (Currently amended) The method of Claim 1 ~~3~~, wherein the projection data comprises a plurality of projection raw computer tomography (CT) data.

5. (Canceled)

6. (Currently amended) The method of claim 1 ~~5~~, wherein said

determination of the total scatter profile for the object further comprises representing the total scatter profile as a sum of the single scatter profile and a multiple scatter profile, and wherein the multiple scatter profile is obtained by multiplying the single scatter profile by the adjustment factor.

7. (Currently amended) The method of Claim 1 ~~3~~, wherein said correction of the projection data comprises subtracting the total scatter profile from the projection data to obtain the scatter corrected projection data.

8. (Currently amended) The method of Claim 1 ~~3~~, wherein said obtaining the voxellized representation of the 3D image of the object further comprises combining a plurality of voxels to form respective large voxels.

9. (Currently amended) The method of Claim 1 ~~3~~, wherein the voxellized representation of the 3D image of the object comprises a plurality of voxels, and wherein said obtaining the voxellized representation of the 3D image of the object further comprises:

determining a threshold for the 3D image ;

comparing a CT number for each of the voxels with the threshold; and

removing a plurality of the voxels based on said comparison to simplify the voxellized representation of the object.

10. (Currently amended) The method of Claim 1 ~~3~~, further comprising:

analyzing the scatter corrected 3D image of the object;

refining the adjustment factor based on said analysis;

recalculating the total scatter profile for the object using the single scatter profile and the adjustment factor; and

correcting the projection data using the total scatter profile to obtain the scatter corrected projection data,

wherein said analyzing, refining, recalculating and correcting steps are repeated until a satisfactory scatter corrected image is obtained.

11. (Original) The method of Claim 1, wherein the image data comprises a plurality of digital radiographic projection data.

12-14. (Canceled)

15. (Original) An imaging system for correcting scatter in an image of an object, said imaging system comprising:

at least one radiation source adapted to expose the object to a plurality of x-rays;

a detector arrangement disposed with respect to said radiation source to receive x-rays passing from said radiation source through the object; and

a computer system coupled to said detector arrangement and configured to:

acquire a plurality of projection data from said detector arrangement and generate a 3D image from the projection data;

generate a voxellized representation of the 3D image of the object;

calculate a single scatter profile for the object using the voxellized representation of the 3D image of the object;

determine the total scatter profile for the object using the single scatter profile and an adjustment factor; and

correct at least one of the projection data and 3D image using the total scatter profile to obtain, respectively, at least one of a scatter corrected projection data and a scatter corrected 3D image.

16. (Original) The imaging system of Claim 15, wherein said computer system is adapted to receive a plurality of projection raw computer tomography (CT) data from said detector arrangement.

17. (Original) The imaging system of Claim 16, wherein said computer system is adapted to determine the total scatter profile for the object by multiplying the single scatter profile by the adjustment factor.

18. (Original) The imaging system of Claim 16, wherein said computer system is adapted to correct the 3D image by subtracting the total scatter profile from the projection data to obtain the scatter corrected projection.

19. (Original) The imaging system of Claim 16, wherein said computer system is further adapted to combine a plurality of voxels to form respective large voxels.

20. (Original) The imaging system of Claim 16, wherein the voxellized representation of the object comprises a plurality of voxels, and wherein said computer system is further configured to:

determine a threshold for the 3D image;

compare a CT number for each of the voxels with the threshold; and

remove a plurality of the voxels based on said comparison to simplify the voxellized representation of the object.

21. (Original) The imaging system of Claim 16, wherein said computer system is further configured to:

analyze the corrected 3D image of the object;

refine the adjustment factor based on said analysis;

recalculate the total scatter profile for the object using the single scatter profile and the adjustment factor; and

correct the 3D image using the total scatter profile to obtain the scatter corrected 3D image data,

wherein said computer system is further configured to repeat said analyzing, refining, recalculating and correcting steps until a satisfactory corrected image is obtained.

22. (Original) The imaging system of Claim 15, wherein the projection data comprises a plurality of digital radiographic projection data.

23. (Original) A method of correcting scatter comprising:

obtaining a voxellized representation of a 3D image of an object from a plurality of projection data;

calculating a single scatter profile for the object using the voxellized representation of the 3D image of the object;

representing a total scatter profile for the object as a sum of the single scatter profile and a multiple scatter profile, wherein the multiple scatter profile is obtained by multiplying the single scatter profile by an adjustment factor; and

correcting the projection data using the total scatter profile to obtain a scatter corrected projection data of the object.

24. (Original) The method of Claim 23, further comprising reconstructing the scatter corrected projection data to obtain a scatter corrected 3D image.

25. (Original) The method of Claim 23, wherein said correction of the projection data comprises subtracting the total scatter profile from the projection data to obtain the scatter corrected projection data.

26. (Original) The method of Claim 25, wherein the voxellized representation of the object comprises a plurality of voxels, and wherein said obtaining the voxellized representation of the object further comprises:

combining a plurality of voxels to form respective large voxels;

determining a threshold for the 3D image;

comparing a CT number for each of the voxels with the threshold; and

removing a plurality of the voxels based on said comparison to simplify the voxellized representation of the object.

27. (Original) The method of Claim 26, further comprising:

analyzing the scatter corrected 3D image of the object;

refining the adjustment factor based on said analysis;

recalculating the total scatter profile for the object using the single scatter profile and the adjustment factor; and

correcting the projection data using the total scatter profile to obtain the scatter corrected projection data,

wherein said analyzing, refining, recalculating and correcting steps are repeated until a satisfactory corrected 3D image is obtained.